

CLAIMS

1. A carrier tape embossing apparatus clamp for linear propulsion and retention of a tape during its embossing process comprising:

- a) a pair of opposed clamp bodies each having a top, a bottom, a first side and a second side, and a radial cavity located within the top,
- b) a leaf spring completely covering each body top directly over the radial cavity,
- c) a spring retainer attached to a portion of the top of each clamp body, and juxtaposed with the leaf spring for holding the spring on one side and yet permitting the spring to be urged away from the body,
- d) a pair of round actuating rods each having a flat surface thereon, disposed within the radial cavities on the clamp bodies, with their flat surface contiguous with the leaf springs such that the leaf spring bends upward away from the body when each respective rod is rotated as the edges of the flat surface are eccentric with the cavities,
- e) a carrier tape horizontally positioned and gripped between the clamp bodies and the leaf springs,
- f) tape retaining means for maintaining the tape edge securely in between the pair of clamp bodies and leaf springs, and
- g) linear actuating means for moving the clamp along with its retained tape in a linear direction through appropriate stations in the carrier tape embossing apparatus and returning the clamp, when the tape is released from between the clamp body and the leaf spring, to an original at-rest position within an appropriate timed sequence to move the tape sequentially through the carrier tape embossing apparatus.

2. The carrier tape embossing apparatus clamp as recited in claim 1 wherein said first side of each clamp body further comprises a bevel to permit clearance with a carrier tape embossing apparatus.

3. The carrier tape embossing apparatus clamp as recited in claim 1 wherein said leaf spring is made of spring steel and has a thickness of from .012 to .016 inches (.305 to .406 millimeters).

4. The carrier tape embossing apparatus clamp as recited in claim 1 further comprising a plurality of threaded fasteners which attach each spring retainer to the respective clamp body.

5. The carrier tape embossing apparatus clamp as recited in claim 1 wherein said round actuating rod flat surface is from .48 to .52 times its diameter.

6. The carrier tape embossing apparatus clamp as recited in claim 1 further comprising an actuating rod rotating means for:

- a) revolving each rod simultaneously in an opposite direction to retain the tape between the clamps when moving the tape in a linear direction, and
- b) releasing the tape when the linear actuating means returns to its original at rest position such that the tape moves in one direction sequentially through the carrier tape embossing apparatus.

7. The carrier tape embossing apparatus clamp as recited in claim 1 wherein said tape retaining means further comprises, said body having a notch located on a corner of the top, and the first side and the leaf spring having a downward depending lip that overlaps and impinges on the notch when at rest, thus creating spring pressure onto the edge of the carrier tape, which holds the tape taut between the clamp bodies as it travels through the tape embossing apparatus.

8. The carrier tape embossing apparatus clamp as recited in claim 1 wherein said tape is gripped on each side a distance of from 0.020 to 0.030 inches (0.508 to 0.762 millimeters).
9. The carrier tape embossing apparatus clamp as recited in claim 1 wherein said linear actuating means further comprises a linear electric motor.
10. The carrier tape embossing apparatus clamp as recited in claim 1 wherein said linear actuating means further comprises a pneumatic cylinder and a reversing lever.
11. The carrier tape embossing apparatus clamp as recited in claim 1 wherein said clamp body is sectionalized to increase its flexibility for use in various types of carrier tape embossing machines.

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